

CLAIMS

What is claimed is:

1. A method for controlling slip in an EMCC equipped torque converter, the method comprising:

determining whether an EMCC slip rate exceeds a predetermined RPM;

determining whether a crankshaft RPM acceleration exceeds a predetermined rate;

reducing an output torque of an engine in response to one of said EMCC slip rate exceeding said predetermined RPM and said crankshaft RPM acceleration exceeding said predetermined rate; and

disabling said output torque of an engine in response to said EMCC slip rate being less than said predetermined RPM and said crankshaft RPM acceleration being less than said predetermined rate.

2. The method of claim 1 wherein said step of reducing an output torque of an engine is accomplished by retarding an ignition timing of said engine.

3. The method of claim 1 wherein said step of reducing an output torque of an engine is accomplished by reducing a fuel flow delivered to said engine.

4. The method of claim 1 further comprising disabling said output torque of said an engine in response to a throttle position signal increasing at greater than a predetermined rate.

5. In a vehicle powertrain system having an engine coupled to a transmission via an EMCC-equipped torque converter, a powertrain control module (PCM) comprising:

means for determining an EMCC slip rate;
means for reducing an output torque of the engine;
means for determining an RPM acceleration rate of the engine;
said means for reducing an output torque of the engine effecting an engine output torque reduction in response to one of said EMCC slip rate exceeding a predetermined RPM and said RPM acceleration being greater than a predetermined amount, said means for reducing an output torque of the engine terminating said engine output torque reduction in response to said EMCC slip rate being less than said predetermined RPM and said RPM acceleration being less than said predetermined amount.

6. The PCM of claim 5 wherein said means for reducing an output torque of the engine comprises an output for retarding an ignition timing of the engine.

7. The PCM of claim 5 wherein said means for reducing an output torque of the engine comprises an output for reducing a fuel flow delivered to said engine.

8. The PCM of claim 5 further comprising an input for a throttle position signal, wherein said terminating said engine output torque reduction further comprises terminating said engine output torque reduction in response to said throttle position signal increasing at greater than a predetermined rate.

9. In a vehicle powertrain system comprising:
an engine coupled to a transmission via an EMCC-equipped torque converter;
a powertrain control module (PCM) having an input for signal indicative of an engine RPM, an input for a signal indicative of a transmission input shaft RPM, an output for reducing an output torque of said engine, a means for determining an RPM acceleration of said engine RPM; and a means for determining an EMCC slip rate between said engine RPM and said transmission input shaft RPM;
said PCM output for reducing an output torque of said engine effecting an output torque reduction of said engine in response to one of said EMCC slip rate exceeding a predetermined RPM and said RPM acceleration being greater than a predetermined amount, said output for reducing said output torque of said engine terminating said engine output torque reduction in response to said EMCC slip rate being less than said predetermined RPM and said RPM acceleration being less than said predetermined amount.

10. The system of claim 9 wherein said PCM of claim 5 wherein said means for reducing an output torque of the engine comprises an output for retarding an ignition timing of the engine.

11. The PCM of claim 9 wherein said PCM output for reducing an output torque of said engine comprises an output for reducing a fuel flow delivered to said engine.

12. The PCM of claim 9 further having an input for a throttle position signal, wherein said output for reducing said output torque of said engine also terminates said engine output torque reduction in response to said throttle position signal increasing at greater than a predetermined rate.